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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,146	12/10/2003	Takahiro Yagishita	246101US2	4802
22850	7590	03/06/2008		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER HUNG, YUBIN	
			ART UNIT 2624	PAPER NUMBER
			NOTIFICATION DATE 03/06/2008	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	Application No. 10/731,146	Applicant(s) YAGISHITA ET AL.	
	Examiner YUBIN HUNG	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,4-6,13 and 15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-6,13 and 15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 September 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____   | 6) <input type="checkbox"/> Other: _____                          |

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 02/04/08 has been entered.

***Claim Objections***

2. Claims 1, 4-6, 13 and 15 are objected to because of the following informalities:

- Claim 1 (and similarly claims 4, 5, 6, 13 and 15):

Line 2: for clarity consider changing "an image data" to "an original image data" (since the first, the second and the third image data are all image data)

Line 7: for clarity consider changing "an image data" to "an original image data"

Lines 17, 23 and 25: for clarity consider changing "the image data" to "the embedded image data" (per lines 13-15 of this claim)

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1, 4-6, 13 and 15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 recites that the adding unit "wherein the adding unit conducts the adding operation when the embedding determiner determines that embedded data has been embedded in the image data, and wherein the adding unit does not conduct the adding operation when the embedding determiner determines that embedded data has not been embedded in the image data"

However, per Fig. 4 and page 15, lines 12-16 of the instant application, it is the selector that selects a process (i.e., the process implemented by refs. 23, 25 and 29 of Fig. 4) so as to perform addition if embedding is determined, and another process (i.e., the process implemented by ref. 23 of Fig. 4 alone) so as not to perform addition otherwise. Note that per p. 13, lines 13-15 (and P. 15, lines 10-12, indicating the only

Art Unit: 2624

difference between Figs. 2c and 4) of the instant application the disclosed adding unit (ref. 25 of both Figs. 2c and 4) does not conditionally performs addition. Therefore the feature recited above is not supported. (See also the agreed-upon interpretation of claim 11 in the 06/12/07 Office action and the subsequent amendment to claim 11 in Applicant's 09/10/07 response.)

5. Claims 4-6, 13 and 15 recite the same feature and therefore are similarly rejected.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 4-6, 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Geisler et al. (US 6,252,989), in view of Fan et al. (US 6,956,958) and Terasaki (US 6,947,572).

8. Regarding claim 1 (and similarly claims 13 and 15), Geisler discloses an image processing apparatus [Fig. 1, computer labeled "Decode/Transmit" (should have 18 as

reference numeral)); Col. 2, lines 48-51; Col. 2, line 66-Col. 3, line 1; Col. 4, lines 30-37 (mode 2 coding)], comprising:

- a first converter that subjects an image data to a low-resolution image conversion to thereby generate a first image data  
[Fig. 5, leftmost "Reduce"; Col. 4, lines 38-45. Note that the apparatus necessarily has to have such a first converter since otherwise the "reduce" operation cannot be carried out]
- a second converter that subjects the first image data to a high-resolution image conversion to thereby generate a second image data  
[Fig. 5, leftmost "Expand"; Col. 4, lines 46-48. Note that the apparatus necessarily has to have such a second converter since otherwise the "expand" operation cannot be carried out]
- an subtracting unit that subtracts the second image data from the image data to thereby generate a third image data  
[Fig. 5, leftmost "Difference"; Col. 4, lines 58-62. Note that the apparatus necessarily has to have such an arithmetic unit since otherwise the "Difference" operation cannot be carried out]
- a compressor that compresses the third image data to thereby generate a compressed image data  
[Col. 4, line 63-Col. 5, line 21. Note that the apparatus necessarily has to have such a compressor since otherwise the threshold/quantize/compress (together considered as compression) operation cannot be carried out]
- a third converter that subjects the (embedded) image data to the high-resolution image conversion to thereby generate a high resolution image data  
[Col. 5, lines 34-42. Note that decompression (the second half of claim 1) is the reverse of the compression of the first half. (Embedding compressed data is taught by Fan, see below)]
- a decompressor that decompresses the embedded data extracted by the extractor to thereby generate a decompressed image data  
[Col. 5, lines 34-42. Note that decompression (the second half of claim 1) is the reverse of the compression of the first half. (Embedding compressed data is taught by Fan, see below)]
- an adding unit that conducts adding operation by adding the high resolution image data to the decompressed image data  
[Col. 5, lines 34-42. Note that decompression (the second half of claim 1) is the reverse of the compression of the first half]

Geisler does not expressly disclose the following:

- an embedding unit that embeds the compressed image data in the first image data to thereby generate an embedded image data
- an extractor that extracts an embedded data from the embedded image data

However, Fan discloses embedding compressed image data in an image from which the compressed image data is derived and subsequently extracts the compressed data.

[Fig. 1, refs. 12 & 14 (generate compressed image data, i.e. compressed watermark, which is then embedded), 20 (extract compressed watermark to be subsequently decompressed); Col. 2, lines 55-60 and Col. 2, line 65-Col. 3, lines 17. Note that the apparatus necessarily has to have such an embedding unit since otherwise the embedding operation cannot be carried out. Note further that in Geisler the compressed image data is derived (i.e., expanded, differenced and compressed) from the level 2 reduced image (i.e., the first image data), along with the original image. Since it is the first image that is transmitted (per the above analysis), it would have been obvious to one of ordinary skill in the art to embed the compressed image data in the first image data; otherwise the information in the compressed image data will not be available in the receiving end in order to reconstruct the image.]

At the time of the invention it would have been obvious to one of ordinary skill in the art to modify Geisler with the teaching of Fan as recited above. The reason for doing so would have been to be able to reconstruct an image with higher fidelity, as Fan indicates in column 1, lines 19-33. [Note that the first image data of Geisler is a lower-resolution (lower-fidelity) version of the original image. Fan's teaching supports the

same correction (to obtain higher-fidelity version of the image) from print to print (of this lower-resolution image) or copy to copy.]

Additionally, the combined invention of Geisler and Fan does not expressly disclose the following:

- a embedding determiner that determines whether embedded data has been embedded in the image data
- wherein the adding unit conducts the adding operation when the embedding determiner determines that embedded data has been embedded in the image data, and wherein the adding unit does not conduct the adding operation when the embedding determiner determines that embedded data has not been embedded in the image data

However, Terasaki discloses detecting if compressed data (watermark) is embedded in the received image data [Fig. 1, refs. 31-31b (embedding determiner); Col. 3, line 65-Col. 4, line 4]. Whether additional action is taken depends on whether embedded data exists. [Col. 4, lines 4-11. Note that this implies that the watermark is not always inserted, or, in other words, compressed data is not always embedded.]

At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the combined invention of Geisler and Fan with the teaching of Terasaki by conducting adding operation only when embedded data exists. The reason obviously would have been for better efficiency by carrying out an operation (e.g., an addition) only when necessary (e.g., one of the required operands, namely the embedded, exists).



Therefore it would have been obvious to combine Terasaki with Geisler and Fan to obtain the invention as specified in claim 1.

9. Regarding claim 4, the combined invention of Geisler, Fan and Terasaki further discloses that the first conversion includes widening a time quantization width, and the second conversion includes narrowing a time quantization width [Geisler: Col. 4, lines 38-48. Note that REDUCE (1<sup>st</sup> conversion) reduces the image in each dimension, i.e., it widens a time quantization width (since each pixel is sampled at a different time) and EXPAND (2<sup>nd</sup> conversion) performs the reverse operation, i.e., it narrows a time quantization width].

10. Regarding claim 5, the combined invention of Geisler, Fan and Terasaki further discloses embedding using electronic watermark technology [Fan: Fig. 1, ref. 14; Col. 2, lines 55-60 and Col. 2, line 65-Col. 3, lines 3].

11. Regarding claim 6, the combined invention of Geisler, Fan and Terasaki further discloses an outputting unit to output the compressed data-embedded first image data. [Geisler: Col. 5, lines 28-32. Note that per the analysis of claim 1, the first image data is embedded with compressed image data. Note that the apparatus necessarily has to have such a transmitting (i.e., outputting) unit since otherwise the transmission operation cannot be carried out. Additionally, the file format used for the compressed data-embedded first image data during its transmission is the predetermined format.].

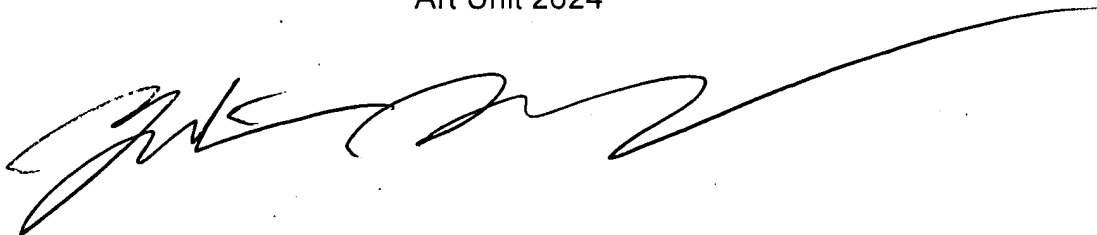
### ***Contact Information***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to YUBIN HUNG whose telephone number is (571)272-7451. The examiner can normally be reached on 7:30 - 4:00. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew C. Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Yubin Hung  
Examiner  
Art Unit 2624

March 1, 2008

A handwritten signature in black ink, appearing to be 'Yubin Hung', is written over a horizontal line.